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PARIS SCHOOL OF ECONOMICS
ÉCOLE D'ÉCONOMIE DE PARIS

WORKING PAPER N° 2010 - 14

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LONG TERM CARE INSURANCE PUZZLE[1]

Pierre PESTIEAU[2] **Gregory PONTHIERE[3]**

Abstract

The purpose of this paper is to examine the alternative explanatory factors of the so-called long term care insurance puzzle, namely the fact that so few people purchase a long term care insurance whereas this would seem to be a rational conduct given the high probability of dependence and the high costs of long term care. For that purpose, we survey various theoretical and empirical studies of the demand and supply of long term care insurance. We discuss the vicious circle in which the long term care insurance market is stuck: that market is thin because most people find the existing insurance products too expensive, and, at the same time, the products supplied by insurance companies are too expensive because of the thinness of the market. Moreover, we also show that, whereas some explanations of the puzzle involve a perfect rationality of agents on the LTC insurance market, others rely, on the contrary, on various behavioral imperfections.

Keywords: long term care insurance, dependence, annuity puzzle

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[1] This paper is based on a presentation made at the *Workshop Long Term Care*, on May 28 2009 in Paris and at an ECORE seminar on March 22 2010. We thank Luc Arrondel, Gabrielle Demange, Pierre-Yves Geoffard, André Masson and Erik Schokkaert, as well as other participants, for helpful suggestions and comments.

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1. Introduction

In most OECD countries, the era of long-term care (LTC) has arrived. More than two out of five people aged 65 or older report having some type of functional limitation (sensory, physical, mental, self-care disability, or difficulty leaving home), and, as such, are not autonomous, and require adequate care.[4] A few years from now, the aging trend will accelerate, fueled by the large "baby boomer" generation, and the relative importance of people aged 65 or older will more than double by 2050, according to the forecasts of the European Union (2009). On the other hand, with the drastic change in family values, the increasing number of childless households and the mobility of children, the number of dependent elderly who cannot rely on the assistance of anyone is increasing.[5] Those two parallel evolutions – demographic and societal – explain why there is a mounting demand on governments and the market to provide alternatives to the family, which has been, across epochs, the largest provider of LTC services (even though those services, by being informal, remain hard to measure). One may hope that both private and social LTC insurance will grow substantially in coming decades. But there are a number of problems that both the State and the market have to solve before they can replace family solidarity. The problems of private LTC can be coined by the concept of LTC insurance puzzle.

There exist in the economic literature a large number of puzzles. One of the most famous ones is the annuity puzzle.[6] Accordingly, whereas economic theory says that annuities are quite valuable and that retirees ought to hold most of their portfolio in this form, empirical evidence shows that most individuals do *not* voluntarily annuitize their resources, and prefer to hold them at the risk of turning penniless if they live "too long". Like any puzzle, this one can be explained in part, and here are the traditional explanatory factors for keeping one's assets and not annuitizing them:

- high annuity prices, as there is a sizeable mortality difference between

[4] See Kemper and Murtaugh (1991) on the probabilities to enter a *nursing home* in the U.S.
[5] On that evolution, see the forecasts made by Duée *et al* (2005).
[6] See Brown (2007).

annuitants and the general population (adverse selection)

- the bequests motive, that is, a desire to leave wealth to one's children
- families as (partial) substitutes for private annuity markets[7]
- high discount rates or underassessment of life expectancy
- uninsured medical expenditure shocks or children's income shocks; the incompleteness of *other* markets ultimately limit the purchase of life annuities[8]

Quite interestingly, parallel to the annuity puzzle, we can also talk of a LTC insurance puzzle. Accordingly, in almost every country, very few people are insured against the risk of old-age dependence costs, and yet, as for the purchase of annuities, it would seem so rational to purchase an insurance against LTC, on the grounds that this is a protection against a risk that is sizeable and increasing.[9] This paper is dedicated to the causes of this puzzle. As we will see, some of the causes are the same as those invoked for the annuity puzzle. Anticipating on the rest of this paper, here are the causes that we will discuss:

- Excessive costs (loading factors and adverse selection)
- Social assistance acting as Good Samaritan
- Trust into family solidarity
- Unattractive rule of reimbursement (lump sum)
- Myopia or ignorance

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[7] For example, couple members who pool their retirement resources using a common budget constraint can pool mortality risk fairly effectively, and thus value annuities less than individuals who are singles.

[8] The intuition behind that argument is that agents want to keep their lifetime savings as a precautionary wealth allowing them to face unexpected events against which they cannot insure, because of incomplete markets.

[9] On the low proportion of people purchasing a private LTC insurance, see Brown *et al* (2006) and Kessler (2007).

- Denial of heavy dependence

This short paper is organized as follows. Sections 2 to 7 present those diverse causes of the LTC insurance puzzle, by explaining how those particular factors may contribute to the underdevelopment of the LTC insurance market. Throughout our survey, we also review some empirical evidence supporting those explanations, and discuss their (in)compatibility with each others. Concluding remarks are drawn in Section 8.

2. Excessive costs

For most individuals, the cost of LTC in case of severe dependence appears high, if not prohibitive. Whereas the average pension of a French household is 1200 euros a month, the cost of a good nursing home runs much above that figure. The average cost of institutional long-term care for old persons in France is currently at 35 000 euros per dependent per year (see OECD, 2006), whereas the yearly price of a nursing home in the U.S. ranges between $40 000 and $75 000 (see Taleyson, 2003). But then how can we explain that individuals do not insure themselves against such high costs?A first, natural explanation of the low demand for LTC insurance is merely the high cost of the LTC insurance. Actually, according to Cutler (1993), 91% of non-insured people find LTC insurance too costly. One factor contributing to making the insurance expensive is that elderly people tend to postpone as late as possible their purchase, so as to get better information on the appropriate policy and on its cost (see Meier, 1999). Brown and Finkelstein (2004a) show that a typical LTC insurance policy purchased at age 65 has a 0.18 *loading factor* (defined as one minus the ratio of the expected present value of the benefits over the premium).[10] Those large loading factors may explain why the covering rate of the LTC insurance is so low. Regarding the *causes* of those high loading factors, Brown and Finkelstein argue that it is hard to discriminate between four causes : administrative costs, imperfect competition, asymmetric information and aggregate risk. All those causes imply a high loading factor, as well as limits in the benefits

[10] That loading factor is significantly larger than the typical load of 0.06 to 0.10 on acute health insurance policies (see Newhouse, 2002).

comprehensiveness (i.e. quantity rationing), which are also observed (i.e. the typically purchased policy covers only 1/3 of expected LTC expenditures).

Note that Brown and Finkelstein also observe that loading factors differ considerably between individuals or group of individuals. They find loading factors of 0.44 for men and - 0.04 for women (that is, better than actuarially fair prices for women) with about the same rate of participation, which reveals a high within-household correlation for insurance decisions.[11]

But the cost of LTC insurance may seem even more excessive *given* some private knowledge about one's own health status. Actually, elderly people appear to have better information than the (public or private) insurance provider as to the occurrence of dependency (see Norton, 2000). It has also been observed that people buying LTC insurance contracts have a *higher* probability of becoming disabled than those who do not buy such contracts (Finkelstein and McGarry, 2003). Similarly, people who discontinue their contracts have a much lower probability of becoming disabled than those who do not (see Finkelstein *et al.*, 2005). This is a classic health insurance *adverse selection* problem. The existence of an adverse selection problem on the LTC insurance market is confirmed by Sloan and Norton (1997)'s econometric study, which is based on two surveys for the U.S. (AHEAD – *Asset and Health Dynamics* – and HRS – *Health and Retirement Survey*). Sloan and Norton find a positive and statistically significant correlation between the subjective probability of entering a nursing home and the probability of purchasing LTC insurance.[12] The presence of adverse selection is also confirmed by Courbage and Roudaut (2008), who find, on the basis of SHARE data for France *(Survey on Health, Aging and Retirement in Europe*), that there exists a positive and statistically significant correlation between, on the one hand, having a high risk of dependence (e.g. high BMI scores and high alcohol

[11] Regarding the causes of the men/women differential in loading factors, this may come from significant gender differences in the care utilization, due to women's higher longevity, but, also, to the mere fact that elderly men are more likely to received unpaid informal aid from their spouses in comparison with elderly women.

[12] Naturally, one cannot exclude the existence of moral hazard explaining that correlation. However, Sloan and Norton find that family structure variables (marital status and children), which should affect the occurrence of moral hazard here, do not influence the probability of purchasing LTC insurance.

consumption), and, on the other hand, the purchase of LTC insurance. Hence the plausible presence of adverse selection may contribute to explain the high LTC insurance costs, and, as a consequence, the LTC insurance puzzle.

3. Social assistance acting as Good Samaritan

Besides excessive insurance costs, another widespread argument is proposed to explain the LTC insurance puzzle. According to that argument, social assistance (Medicaid in the case of the U.S.) would crowd out private insurance (Norton, 2000). Actually, Sloan and Norton (1997) observe a negative correlation between Medicaid availability and the purchase of private LTC insurance. According to Brown and Finkelstein (2004b), the existence of a last resort payer like Medicaid reduces (even an actuarially fair) private insurance market by two thirds. They show that for men (women) with median assets, 60 % (75 %) of contributions to private insurance are redundant with Medicaid. On the other hand, Brown *et al.* (2006) show that, if the Medicaid resource test ceiling were raised up to $10 000 per year, private insurance coverage would only increase by 1.1 %.[13] This latter study tends thus to qualify the size of the crowding out effect: even though this is statistically significant, there must necessarily be other forces driving the LTC insurance puzzle. The crowding out alone cannot do the entire job.

To conclude, note that it is also important to distinguish here between two different cases of 'abuse' of social assistance.[14] On the one hand, there exist some individuals who decide to spend all their resources while being young and healthy, because they know that the State will not drop them and will act as a Good Samaritan. On the other hand, there exist also other individuals, who either hide their resources, or strategically pass them to their children as *inter vivos* gifts, to be able to benefit from means tested benefits such as Medicaid in the US or APA in France. In a number of countries, the

[13] According to Brown *et al* (2006, p. 21), this minor impact from changing eligibility criteria is due to the fact that, as long as Medicaid remains a secondary payer, even without any asset limits to Medicaid eligibility a large portion of private insurance benefits are redundant of what Medicaid would otherwise have paid.

[14] Of course the term 'abuse' is value-loaded, and one may prefer to talk about a 'strategic use' of the Medicaid social insurance system.

social assistance part of LTC is managed at the local level, and even though local authorities have the legal power to reclaim part of the estate of those having benefited from LTC assistance, public authorities are reluctant to do so. But whatever the case considered, the outcome for private LTC insurance is the same: because of the existence of the State, agents have little incentives to buy a private LTC insurance, as a result of a standard crowding out effect.

4. Trust into family solidarity

Whereas the State is often regarded as a major cause of the LTC insurance puzzle, the family is also widely cited as an alternative explanatory factor. The intuition behind that family explanation is not fundamentally different from the family explanation for the annuity puzzle. In each case, the puzzle can be solved by highlighting that the standard microeconomic argument supporting the purchase of annuities or of LTC insurance relies on a simplistic model, which may not take the richness of family life into account.

In the case of LTC insurance, buying that kind of protection seems indeed rational under some particularly defined preferences, but may not be so if one has specific family concerns. More concretely, LTC insurance reduces the cost of institutionalization, and, thus, will not be bought by elderly parents who want to be aided by their children in case of dependency (see Pauly, 1990). Indeed, buying an LTC insurance is paradoxically the best way to be sent to an (anonymous) nursing home, instead of being helped at home by a family member. Thus, provided the elderly has a taste for being helped by his or her family, the incentive to buy a private LTC insurance is quite low, even in the absence of State assistance.

Note, however, that the introduction of family concerns does not, on its own, suffice to lead to the LTC insurance puzzle. Actually, whether the parent is altruistic or not

matters a lot.[15] If he is (sufficiently) altruistic, he will buy LTC insurance to avoid burdening his spouse or children in case of dependency (see Pauly, 1996), even though he would prefer being helped by his children from a purely self-oriented perspective. An altruistic parent does not want to impoverish his descendants, or to cause them troubles, and, as a consequence, he is likely to buy LTC insurance. On the contrary, if the elderly is not altruistic, he will behave strategically, and will use his estate to obtain assistance from his children, and, thus, will not purchase LTC insurance (see Norton, 2000).[16]

Note that the empirical literature is far from unanimous on the role of family concerns. Sloan and Norton (1997) show that the family does not seem to play a role in the U.S., as caring about the bequests left to descendants has a statistically insignificant impact on the demand for private LTC insurance. On the contrary, Courbage and Roudaut (2008), using the French SHARE data, show that being married and having children make it likelier to purchase private LTC insurance, in conformity with the theory under altruistic parents.

5. Unattractive rule of reimbursement (lump sum)

An alternative explanation of the LTC insurance puzzle may lie in the precise form of the LTC insurance *contracts* that can be found on the market. In the tradition of health care insurance, one would expect LTC insurance contracts to provide for the reimbursement of care and services costs, possibly up to a certain limit and with multiple options, including deductibles. This is less and less the case. An increasing number of insurance markets, typically the French one, provide for the payment of a monthly cash benefit, which is proportionate to the degree of dependency involved and adjusted according to the evolution of this dependency. These products are closely related to annuitized products and their limited insurability is justified by some type of

[15] See Hoerger *et al* (1996) and Sloan *et al* (1997) on the empirical testing of parental altruism. Their results reject the strategic hypothesis, as the aid received by the elderly parent is independent from the number of children, from his/her wealth, and from his/her cognitive awareness, contrary to the theory.

ex post moral hazard.[17] In long-term care, the degree of dependency can be assessed quite objectively; what is more subjective, or at least dependent on cultural and psychological factors, is the extent of the needs of the dependent person. The perception of long-term care as a risk is a very recent phenomenon, and the needs implied by a loss of autonomy are relatively vague and susceptible to widely varying interpretations depending on the social climate and the family background. For example, having trouble taking a bath constitutes a loss of autonomy that implies different demand for services depending on the people concerned. To avoid lengthy and costly discussions, insurance companies prefer to offer a cash benefit that people can use each their own way, with the consequence that some individuals feel shorthanded.

Whereas the form of the LTC insurance contract may seem to be an irrelevant detail for explaining the LTC puzzle, Cutler (1993) claims that the incomplete nature of the LTC insurance contract may be the major explanation of the puzzle. Cutler argues that, in the case of an LTC insurance, there exists, unlike for standard health insurance, a long delay between the purchase of the insurance and the first LTC expenditures and reimbursements. However, the risk of a rise in LTC costs per dependent person is high, and *common* to all members of a given cohort. Thus, according to Cutler, the unique way to insure oneself against a rise of LTC costs is to make intertemporal pooling (i.e. on several cohorts). Unfortunately, the large *intertemporal correlation* of LTC costs makes such a division of risk difficult, if not impossible. As a consequence, the risk of a rise in LTC costs over time looks like a risk against which one *cannot* be fully insured. That theoretical rationale explains why contracts now propose lump sum reimbursements (or numerous restrictions to reimbursement). Moreover, the fact that the LTC insurance is a quite risky business explains also the large required *premia* (and thus the excessive prices, see Section 2). But all this deters the elderly from buying a private LTC insurance, as this seems to be far from advantageous for him. This is

[16] Note that this discussion presupposes that there exists no insurance that children could buy to pay for their parents' costs if necessary. Such an insurance could modify the parental strategic behaviour.
[17] A type of moral hazard that cannot be taken care of by co-payments and/or deductibles.

another explanation of the LTC puzzle, which, as the previous ones, relies on the full rationality of agents, in the sense that the low demand for LTC private insurance would be, in each case, explained by rational calculations. Note, however, that this explanation differs from the previous ones, as it remains true *even* in the absence of high costs, and without any family solidarity or State intervention.

6. Myopia or ignorance

The explanations of the LTC insurance puzzle that have been discussed so far do not presuppose any particular behavioral imperfection of agents on the LTC insurance market: agents are fully rational, and the underdevelopment of LTC insurance is also rational. However, various alternative explanations of the puzzle involve some kind of *behavioral imperfections*, and are thus fundamentally different from the previous ones. Let us now turn to some of these.

When considering the low amounts of purchase of private LTC insurance around the world, one cannot forget that the decision under study involves the presence of a *risk*: the risk of old-age dependency. But it is even more important to notice that individual choices – either to purchase or not to purchase LTC insurance – are not necessarily based on the *actual* risk of old-age dependency, but, rather, reveal how elderly persons *perceive* the risk of old-age dependency, which is something different.

In the LTC literature, there exist accurate empirical estimates of the risk of old-age dependency. For instance, according to Kemper and Murtaugh (1997), a person of age 65 has a 0.43 probability to enter a nursing home. That probability is also shown to differ significantly between men and women: it is merely 0.33 for men (as their wife will generally be in a better health and thus will take care of them), and is above 0.50 for women. Moreover, Murtaugh *et al* (1997) show that the stays at nursing homes are long : 15-20 % of newcomers will remain more than 5 years. Taken together, those estimates, if coupled with the large cost of LTC, should make a large proportion of the population at risk buy LTC private insurance.

However, it is doubtful that elderly persons are informed of those figures, and can manipulate those figures cautiously when making their decision to buy LTC insurance. Agents' decision to buy or not to buy an insurance reveal their subjective probabilities of old-age dependency, and these may be significantly inferior to actual probabilities.[18]

Whereas it is not trivial to measure subjective beliefs, the data presented by Finkelstein and McGarry (2003) suffice to cast some doubt on the elderly's information and information processing capacity. According to the *Asset and Health Dynamics* survey, about 50 % of the surveyed population (with an average age of 79 years) reports a subjective probability of institutionalization within 5 years equal to 0. Such beliefs sounds overoptimistic, and, given the singular shape of the distribution of the subjective probability of institutionalization, one may have doubts about the overall quality of those beliefs.[19]

Hence there may be a strong behavioral explanation to the LTC insurance puzzle. Whether this takes the form of some myopia, of some ignorance or of some bizarre attitude in front of risk remains to be clarified, but it seems clear that objective expected utility models with full information may not describe real choices adequately.

7. Denial of heavy dependence

Finally, let us conclude our review of possible explanations of the LTC puzzle by another, still behavioral, explanation, which also deserves to be considered here. Clearly, when discussing LTC so far, we did *as if* the issue at stake concerned something that is common in everyday life. But old-age dependency is, by its very

[18] Regarding the formation of beliefs on the LTC risk, Courbage and Roudaut (2008) report that the facts of receiving an informal help, or of giving some informal help, have both a positive effect on the probability to purchase LTC insurance. This supports the crucial role played by subjective beliefs for the demand for LTC insurance.

[19] That probability distribution has a second mode, at a level of 0.5 (for 15 % of the surveyed population).

nature, a singular event in one's life, and, as a consequence, the insurance against LTC costs cannot be treated as a normal insurance (e.g. against domestic fires).[20]

Heavy dependence, like death, generates anxiety, and this may imply the possibility of *denial* of dependence-relevant information, interacting with intertemporal choices. Such a denial is likely to lead to time-inconsistent decisions and other "behavioral" phenomena.[21] Repression of signals of mortality leads to underinsurance for unsophisticated individuals. Note that for forward-sophisticated individuals, the result can be reversed: they may over-insure in anticipation of future denial and seek commitment devices. Refusal to face up to the reality of dependence may help explain an inadequate purchase of LTC insurance.

Whereas that kind of explanation of the LTC insurance puzzle shares some psychological, behavioral nature, with the one of Section 6 (myopia or ignorance), one should be careful before grouping these under the same heading. Clearly, while one may think about (more or less) easy ways to correct for myopia or ignorance (e.g. information campaigns, adequate taxes or subsidies), the same is not that obvious in case of denial. A denial is not a problem of not being able to perceive things, or of not being able to collect or process the information that is necessary for the decision to be made. It is the *lack of will* to do so. This kind of behavioral imperfection seems harder to overcome. If the LTC puzzle is due to a denial of old-age dependency, then policy implications would take forms that are radically different from the ones under other sources of the puzzle, as we shall discuss below.

8. Concluding remarks

For years, researchers have been puzzled by the fact that so few people purchase lifetime annuities for their retirement portfolios. Rational theories have been proposed, but none can fully explain the small size of the actual market. This phenomenon has

[20] According to Istre *et al* (2001), the yearly rate of injured person due to domestic fire is about 5.2 per 100 000 persons, with a significant heterogeneity (higher rates for the elderly).
[21] On the denial of death and its behavioral consequences, see Kopczuk and Slemrod (2005).

been called the annuity puzzle. In the same vein, one can be surprised by the very low demand for LTC insurance, which cannot be explained by traditional lifecycle theories. The market is relatively thin in most countries. We have, in this short paper, considered a whole array of reasons, including psychological and behavioral ones, in order to solve the LTC insurance puzzle. The diversity of candidate explanations could hardly be overemphasized. Some explanations, such as excessive costs, the crowding out by the State, family concerns or inadequate contracts, rely on a full rationality of agents. Others, on the contrary, require behavioral imperfections, such as myopia, ignorance or denial. Thus some of those alternative explanations are not compatible with each others, and further empirical investigations are needed to be able to solve the LTC insurance puzzle.

But beyond a need for further empirical testing of those alternative explanations of the LTC insurance puzzle, another relevant question raised by this overview is that of *policy implications*. If we really want to have a more attractive LTC insurance market, we have to see what can be done with respect to the 6 factors just discussed. First, there is the issue of adverse selection. By making the insurance mandatory at a given age, or by inducing a majority of households to subscribe to such insurance, the adverse selection pitfall can be overcome. Concerning the crowding out issue and the Good Samaritan matter, they can be avoided by enforcing the means tests and by extending them to the wealth of the family. There is no reason to fight family solidarity, but, at the same time, it is important to notice that LTC insurance can be a solution to the numerous cases where the altruism is forced. As to the phenomena of myopia or ignorance, they have to be treated separately. Ignorance can be fought by better informing people about the risk of dependence and the longevity prospects. Myopia arising from a problem of self control and duality of selves calls for some form of mandatory programs, exactly as the denial of heavy dependence does.

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